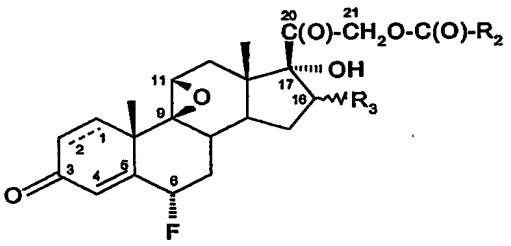
Claims:

1. A process for the preparation of 6α-fluoro compounds of formula I,



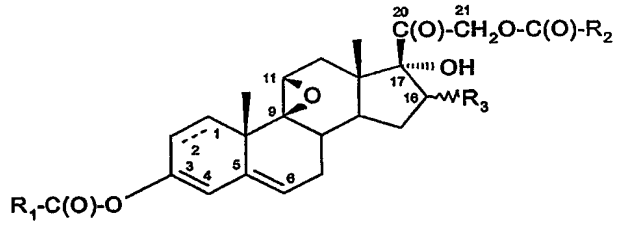
(I),

wherein

R_2 is hydrogen, C_1-C_8alkyl or C_3-C_8cycloalkyl; and

R_3 is hydrogen, C_1-C_8alkyl, or R_4-C(O)-O- where R_4 is C_1-C_8alkyl or C_1-C_8hydroxyalkyl;

comprising the fluorination of pregnane derivatives in the 6-position with an electrophilic fluorination agent, in an inert solvent and at ambient temperatures, characterised in that (1) a compound of formula II



(II),

wherein

R_1 is phenyl or phenyl substituted with halogen, hydroxy, amino, mono- or di-C_1-C_8alkylamino, C_1-C_8alkyl, C_1-C_8alkoxy and/or C_1-C_8carbalkoxy; and R_2 and R_3 have the meanings given before;

is reacted with an electrophilic fluorination agent (2) in the presence of a salt of a strong acid with a nitrogenous base under (3) substantial water-free reaction conditions.

2. A process according to claim 1, wherein R_2 is methyl.

3. A process according to claims 1 or 2, wherein R_3 is hydrogen, methyl or acetoxy.

4. A process according to claims 1 to 3, wherein R_1 is phenyl or phenyl substituted with fluorine, chlorine, hydroxy, dimethylamino, methyl, ethyl, methoxy, ethoxy and methoxycarbonyl.

5. A process according to claim 1, wherein the solvent is selected from the group of nitriles, N-dialkylated carboxylic acid amides or N-alkylated cyclic carboxylic acid amides, ethers and carboxylic esters.

6. A process according to claim 1, wherein the reaction temperature is from –20 °C to 50 °C.

7. A process according to claim 8, wherein the fluorinating agent is 1-chloromethyl-4-fluoro-1,4-diazoniabicyclo[2,2,2]octane-bistetrafluoroborate, or 1-fluoro-4-hydroxy1,4-diazoniabicyclo[2,2,2]octane-bistetrafluoroborate.

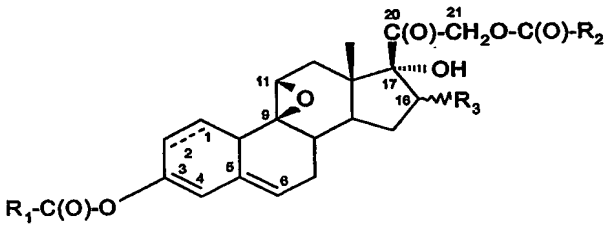
8. A process according to claim 1, wherein the amine salt corresponds to formula III,

$HB^+ A^-$ (III),

wherein HB^+ is the cation of an aliphatic, aromatic, cyclic aliphatic or cyclic aromatic nitrogen base, and A^- is the anion of a strong organic or inorganic acid, and wherein the amine salt is preferably pyridine methylsulfonate.

9. A process according to claim 1, wherein the amount of amine salt is from 0.1 to 100 and preferably 50 to 90 percent by weight, referred to the amount of compounds of formula II.

10. Compounds of formula II,



(II),

wherein R_1, R_2 and R_3 have the meanings given in claim 1, with the proviso that R_1 is not phenyl, when R_2 and R_3 are methyl.